

EXTENDED RANGES OF SEVENTY-FIVE SPECIES
OF NORTH PACIFIC SHELLS COLLECTED
BY WALTER J. EYERDAM AND
INGVARD NORBERG

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During 12 trips to Alaska and 2 trips to Kamchatka and the maritime province of East Siberia, I have made one of the largest and most extensive collections of shells from the North Pacific to be found outside of the U. S. National Museum. Most of the shells I have taken myself but some notable additions were made by Ingvard Norberg on Akutan, Chichagof and Hinchinbrook islands during Summers of 1931, 1932, 1934 and 1936. My own activities in collecting shells in these northern waters started in 1917 at Port Armstrong, Baranof Island, while engaged as cooper for the U. S. Whaling Co. In subsequent years I went to Alaska and Siberia engaged in whaling, fishing, mining and in biological collecting for several American and European museums.

In checking up all of the North Pacific shells in regards to known geographical ranges the following 75 species were found to have been taken beyond the limits as reported in Bulletin 112—"Summary of the Marine Shellbearing Mollusks of the Northwest Coast of America, from San Diego, California, to the Polar Sea, mostly contained in the Collection of the United States National Museum," by William H. Dall.

Most of the shells in the following report were identified by Drs. Dall, Bartsch and Mrs. Oldroyd. The new species are not included.

Yoldia ensifera Dall. Dredged July, 1922—Izhut Bay, Afognak I., Alaska. Former range—S. E. Alaska to San Luis Obispo, California. Extended range—about 700 miles westward.

Cuspidaria pectinata Cpr. 10 fathoms—muddy bottom—Smith's Cove, Puget Sound.—1921. Former range—Monterey, California to Panama. Extended range—about 1000 miles northward.

Phacoides californicus Conrad. Sandy Beach—1906—Alki Point, Seattle, Washington. Former range—Crescent City, California, to San Ignacio Lagoon, L. Calif. Extended range—about 500 miles northward.

Limatula subauriculata Montagu. 20 fathoms—sandy—1922—Izhut Bay, Afognak I., Alaska. Former range—Br. Columbia to San Quentin Bay, Lower Calif., also Atlantic. Extended range—about 700 miles.

Parapholas californica Conrad. In rocks—low tide—1908—Newport, Oregon. Former range—Monterey to San Diego, California. Extended range—about 700 miles northward.

Musculus discors Linn. Not previously reported from this coast?

Platydodon cancellatus Conrad. 1926—low tide—sand and gravel—Clallam Bay, Str. of Juan de Fuca, Wash. Known range—Baulinas Bay, Calif., to San Diego, Calif. Extended range—northward about 1500 miles.

Kennerlia bilirata (Conrad). Dredged 15 fms. muddy bottom. Drier Bay, Prince William Sound, Alaska. October, 1924. Former range: Forrester Island, Alaska, south to Point Abrejos, Lower California. Extended range: about 700 miles.

Cadulus hepburni (Dall). Dredged 20 fms., sandy bottom. Drier Bay, Knight Island, Prince William Sound, Alaska. July, 1923. Former range: Victoria, B. C., to Monterey, Calif. Extended range: about 1000 miles northward.

Admete couthouyi var. *gracilior* (Cpr.). Dredged 10 fms., mud. Izhut Bay, Afognak Island, Alaska, Aug., 1922. Former range: San Diego, Calif. (Gabb, Pal. Cal. Vol. 2, p. 50). Identified by Dall. Extended range: about 2600 miles.

Admete californica (Dall). Dredged 15 fms., stony bottom. Elrington Island, Alaska, July, 1924. Former range: Tillamook, Oregon, to Lower Calif., in deep water. Extended range: about 1200 miles northward.

Tritonalia lurida (Midd.). On stones on beach—Port Armstrong, Baranof Island, Alaska, July, 1917. Former range: Forrester Island, Alaska, to Catalina Island, Calif. Extended range: about 200 miles northward.

Melanella micans (Cpr.). Dredged 25 fms., sandy bottom, Drier Bay, Knight Island, Prince William Sound, Alaska, Sept., 1923. Former range: Vancouver Island, B. C., to Todos Santos Bay, Lower Calif. Extended range: about 1000 miles northward.

Odostomia (Amaura) kennerlyi (Dall and Bartsch). Dredged

15 fms., mud. Izhut Bay, Afognak Island, Alaska, Aug., 1922. Former range: Nanaimo, B. C., to Monterey Bay, Calif. Extended range: about 1200 miles northwestward.

Odostomia (Amaura) sanjuanensis (Bartsch). Among stones on beach. Drier Bay, Knight Island, Prince William Sound, Alaska, July, 1923. Former range: San Juan Islands in the Gulf of Georgia. Extended range: about 1200 miles northward.

Odostomia (Amaura) talpa (Dall & Bartsch). Among stones on beach. Drier Bay, Knight Island, Prince William Sound, Alaska, July, 1923. Former range: Mole harbor and Sitka harbor, Alaska. Extended range: about 600 miles northward.

Odostomia (Evalea) stephansae (Dall & Bartsch). Among stones on beach. Drier Bay, Knight Island, Prince William Sound, Alaska, July, 1923. Former range: Bear Bay, Peril Strait, Alaska, to Barclay Sound, British Columbia. Extended range: about 500 miles northward.

Odostomia (Evalea) willetti (Bartsch). Among seaweed on stony beach. Drier Bay, Alaska, July, 1923. Former range: Prince of Wales Island, Alaska. Extended range: over 600 miles northward.

Odostomia (Evalea) skidegatensis (Bartsch). Among seaweed on sandy beach. Drier Bay, Alaska, July, 1923. Former range: Skidegate, Queen Charlotte Island, Alaska, to Trinidad, Calif. Extended range: About 800 miles.

Odostomia (Evalea) quadrae (Bartsch). Among seaweeds, on stony beach, Drier Bay, Knight Island, Alaska, July, 1923. Former range: Barclay Sound, Vancouver Island. Extended range: About 900 miles.

Odostomia (Evalea) unalaskensis (Bartsch). Under stones, Shuyak Strait, Alaska, Aug., 1924. Former range: Captain's Harbor, Unalaska Island, Alaska. Extended range: About 600 miles.

Cerithiopsis (Cerithiopsidella) oneilensis (Bartsch). Under stones on the beach, Drier Bay, Knight Island, Prince William Sound, Alaska, July, 1923. Former range: Oneil Island, San Juan group, Washington. (*Type locality.*) Extended range: About 1200 miles northward.

Cerithiopsis (Cerithiopsis) charlottensis (Bartsch). Among stones on beach, Drier Bay, Knight Island, Alaska, July, 1923. Former range: Queen Charlotte Islands to Puget Sound. Extended range: About 700 miles northward.

Cerithiopsis (Cerithiopsis) stejneri (Bartsch). Under rocks at low tide mark, Puget Sound, Washington, July, 1920. Former range: Sitka, Alaska. Extended range: About 600 miles southward.

Bittium (Semibittium) vancouverensis (D. & B.). Among stones on beach, Drier Bay, Knight Island, Alaska, Aug., 1923. Former range: Barelay Sound, Vancouver Island, B. C. Extended range: About 1000 miles northward.

Spirogyphus lituellus (Mörch). Common on dead shells, Ishut Bay, Afognak Island, Aug., 1922. Former range: Forrester Island, Alaska, to San Diego, Calif. Extended range: About 800 miles northwestward.

Velutina cryptospira (Midd.). On rocks at low tide, July, 1925, Gulf of Kronotsky, Kamchatka. Former range: Gulf of Alaska. Extended range: About 2500 miles westward.

Calliostoma costatum (Martyn). Under stones at low tide, July, 1922, Ishut Bay, Afognak Island, Alaska. Former range: Sitka, Alaska, to San Diego, Calif. Extended range: About 700 miles northwestward.

Cidarina cidaris (A. Adams) 1864. Dredged 25 fms. muddy bottom, July, 1922, Izhut Bay, Afognak Island, Alaska. Former range: Kasaän Bay, Alaska, to Cape San Quentin, Lower Calif. Extended range: About 700 miles northwestward.

Retusa semen (Reeve). On roots of eel grass, July, 1923, Coll. no. 694, Drier Bay, Knight Island, Alaska. Former range: Off Point Collinson, Arctic Ocean (also Atlantic Ocean). Extended range: About 700 miles southward.

Retusa harpa (Dall). On roots of eel grass, Drier Bay, Knight Island, Alaska, July, 1923. Former range: Queen Charlotte Islands, B. C., to San Diego, Calif. Extended range: About 800 miles northward.

Cypraeolina pyriformis (Cpr.). On nullipores at low tide mark, July, 1923, Drier Bay, Knight Island, Alaska. Former range: Peril Strait, Alaska, to Mazatlan, Mexico. Extended range: About 400 miles northward.

Haminoea olgae (Dall). On roots of eel grass, July, 1923, Drier Bay, Knight Island, Alaska. Former range: Olga, San Juan Islands, Wash., to San Quentin Bay, Lower Calif. Extended range: 700 miles northward.

Lora mörchi (Dall)-(Leche). Dredged 20 fms. stony bottom, July, 1923, Drier Bay, Knight Island, Alaska. Former range: Nova Zembla, Arctic Ocean, to Bering Strait. Extended range: About 800 miles southward.

Columbella tuberosa (Cpr.). Dredged 20 fms., July, 1924, Elrington Island, Prince William Sound, Alaska. Former range: Forrester Island, Alaska, to Gulf of California. Extended range: About 800 miles northward.

Barleiea sanjuanensis (Bartsch). On stony algae at low tide, July, 1924, Elrington Island, Alaska. Former range: San Juan Islands, Puget Sound, Washington. Extended range: About 1100 miles northward.

Plicifusus kroyeri (Möller). On sandy beach, July, 1925, near mouth of the Kamchatka River, Kamchatka. Range: Point Barrow, Alaska (Circumboreal). Extended: to Kamchatka. (Vladivostok also in 1928.) Coll. by W. J. Eyerdam.

Micranellum oregonensis (Bartsch). Dredged 20 fms. shelly bottom, Drier Bay, Knight Island, Alaska, July, 1923. Range: Forrester Island, Alaska, to Monterey, California. Extended range: About 700 miles northward.

Fartulum occidentale (Bartsch). Dredged 20 fms. on roots of eel grass, Drier Bay, Knight Island, Alaska, July, 1923. Range: Gulf of Georgia to Lower California. Extended range: About 1000 miles northward.

(To be continued)

NOTES

XESTA AND TROCHONANINA.—Nevill, 1878, Hand List Moll. Ind. Mus. 1: 50, designated *Nanina citrina* (Linné) as the type of *Xesta* Albers; his action is earlier than Kobelt's (1880) choice of *Nanina stuartiae* (Pfr.) [Cf. H.B.B., 1936, Naut. 50 (1): 30]. *Xesta* thus becomes a synonym of *Naninia* Sowerby, and *Asperitas* Gude may be used for the group of *Elaphroconcha inquinata* (Busch). Nevill, 1878: 45, also designated *Nanina mozambicensis* (Pfr.) as